

IN THE CLAIMS

Claims 1-49 (cancelled)

Claim 50 (new): An electrical machine comprising:

a magnetically permeable ring-shaped core encircling an axis and having first and second opposite surfaces;

coils wound toroidally about the core and disposed sequentially along a circumferential direction of the core, each coil including first and second legs extending alongside the first and second core surfaces;

a flange overlying the first core surface in-between two adjacent first legs and extending from one of the two adjacent first legs to the other; and

a magnet that is rotatable, relative to the core, about the axis and has a pole face surface with north and south pole faces, the pole face surface being located such that the pole face surface and the flange are adjacent and facing each other such that flux lines can extend from the poles through the flange to the core.

Claim 51 (new): The machine of claim 50 wherein the flange is of non-magnetically permeable material.

Claim 52 (new): The machine of claim 50 wherein the flange is of magnetically permeable material.

Claim 53 (new): The machine of claim 53 wherein the magnetically permeable material is iron-based.

Claim 54 (new): The machine of claim 50 wherein the first and second core surfaces are axially-opposite each other, and the first and second coil legs are radially-extending.

Claim 55 (new): The machine of claim 50 further comprising a second flange overlying the second core surface in-between two adjacent second legs that correspond to the adjacent first legs, and a bridging structure connected to the first and second flanges.

Claim 56 (new): The machine of claim 55 wherein the bridging structure is configured to mount the core in place.

Claim 57 (new): The machine of claim 55 wherein the bridging structure includes a bridging flange that extends from the first flange to the second flange and overlies the core.

Claim 58 (new): The machine of claim 57 wherein the bridging structure further includes a mounting flange projecting perpendicularly from the bridging flange to mount the core in place.

Claim 59 (new): The machine of claim 50 wherein the first and second core surfaces are axially-opposite each other, the first and second coil legs are radially-extending, and the flange is triangular in order to fill in the triangular space between the adjacent first legs.

Claim 60 (new): An electrical machine comprising:

- a magnetically permeable ring-shaped core encircling an axis and having first and second opposite surfaces;

- coils wound toroidally about the core and disposed sequentially along a circumferential direction of the core, each coil including first and second legs extending alongside the first and second core surfaces;

- a flange having opposite first and second surfaces, with the first flange surface overlying the first core surface in-between two adjacent first coil legs, and with the second flange surface and the adjacent first coil legs jointly defining a flat outer surface; and

- a magnet that is rotatable, relative to the core, about the axis and located such that a surface of the magnet and the second flange surface are adjacent and facing each other such that flux lines can extend from magnet surface through the flange to the core

Claim 61 (new): The machine of claim 60 wherein the outer surface is flat due to the flange having a thickness approximately equal to a bundle thickness of the adjacent first legs.

Claim 62 (new): The machine of claim 60 wherein the flange is of non-magnetically permeable material.

Claim 63 (new): The machine of claim 60 wherein the flange is of magnetically permeable material.

Claim 64 (new): The machine of claim 63 wherein the magnetically permeable material is iron-based.

Claim 65 (new): The machine of claim 60 wherein the first and second opposite core surfaces are axially-opposite each other, and the first and second legs are radially-extending.

Claim 66 (new): The machine of claim 60 further comprising a second flange overlying the second core surface in-between the two adjacent second coil legs that correspond to the adjacent first coil legs, and a bridging structure connected to the first and second flanges.

Claim 67 (new): The machine of claim 66 wherein the bridging structure is configured to mount the core in place.

Claim 68 (new): The machine of claim 66 wherein the two adjacent first coil legs are respectively connected to the two adjacent second coil legs by two adjacent end coil legs, and wherein the bridging structure includes a bridging flange that extends from the first flange to the second flange, the bridging flange having a first surface that overlies an end surface of the core and an opposite second surface located such that the core end surface and the end coil legs jointly defining a flat outer surface.

Claim 69 (new): The machine of claim 67 wherein the bridging structure further includes a mounting flange projecting perpendicularly from the bridging flange to mount the core in place.

Claim 70 (new): An electrical machine comprising:

a magnetically permeable ring-shaped core encircling an axis and having first and second opposite side surfaces and an end surface extending from the first surface to the second surface;

coils wound toroidally about the core and disposed sequentially along a circumferential direction of the core, each coil including first and second side legs extending along the first and second core side surfaces and an end turn extending along the end surface;

a bracket located in-between two adjacent coils, the bracket including first and second side flanges overlying the first and second core side surfaces, and further including a bridging flange extending from the first side flange to the second side flange and overlying the core end surface, the bracket configured to mount the core in place; and

a magnet that is rotatable, relative to the core, about the axis and located such that a surface of the magnet and the first flange are adjacent and facing each other such that flux lines can extend from magnet surface through the first side flange to the core.

Claim 71 (new): The machine of claim 70 wherein the first, second and bridging flanges are of non-magnetically permeable material.

Claim 72 (new): The machine of claim 70 wherein the first, second and bridging flanges are of magnetically permeable material.

Claim 73 (new): The machine of claim 70 wherein the magnet surface is a pole face surface with north and south pole faces.

Claim 74 (new): The machine of claim 70 wherein the first and second opposite core surfaces are axially-opposite each other, the end surface is a radially-outer circumferential surface, the first and second coil legs are radially-extending, and the end turn is axially-extending.

Claim 75 (new): The machine of claim 74 wherein the side flanges are triangular in order to fill in the triangular space between the first legs of the two adjacent coils.

Claim 76 (new): The machine of claim 70 wherein the bracket further includes a mounting flange parallel to the side flanges and projecting from the bridging flange away from the core to mount the core in place.

Claim 77 (new): An electrical machine comprising:

a magnetically permeable ring-shaped core encircling an axis and having a radially-extending side surface;

coils wound toroidally about the core and disposed sequentially along a circumferential direction of the core;

a flange overlying the core side surface in-between two adjacent coils and extending from one of the adjacent coils to the other; and

a ring-shaped magnet that is rotatable, relative to the core, about the axis and has a radially-extending side surface located such that the magnet side surface and the core side surface face each other, such that flux lines can extend from the magnet side surface through the flange to the core.

Claim 78 (new): An electrical machine comprising:

a magnetically permeable ring-shaped core encircling an axis and having a surface;

coils wound toroidally about the core and disposed sequentially along a circumferential direction of the core;

a flange having opposite first and second surfaces, with the first flange surface overlying the core surface in-between two adjacent coils, and with the second flange surface and the adjacent coils jointly defining a flat outer surface; and

a magnet that is rotatable, relative to the core, about the axis and has a surface that faces the core, such that flux lines can extend from the magnet surface to the core.